# DETERMINATION OF HEAVY METAL (MERCURY, ARSENIC, LEAD, NICKEL AND CADMIUM) WASTE WATER NEAR FACTORIES IN MERU TOWNSHIP, KLANG

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## ABSTRACT

### DETERMINATION OF HEAVY METAL (MERCURY, ARSENIC, LEAD, NICKEL AND CADMIUM) WASTE WATER NEAR FACTORIES IN MERU TOWNSHIP, KLANG.

Meru township area, Klang was chosen for study of the heavy metals and WQI in waste water may be released by the nearby factories. In this area, there are large proportion of the pollution may arises from the production waste during the factories processing. The objective of this study is to determine critical parameter in waste water near the factories which are pH, SS, COD, DO, BOD, and Ammoniacal Nitrogen, to ensure the waste water fulfilled the standard set by DOE Malaysia and to determine the WQI in the waste water near the factories. The concentrations of heavy metals (Hg, As, Pb, Ni and Cd) in water were investigated. Twenty five samples of water were collected from different location in Meru Township, Klang. In-situ measurements were done using hydrolab for five parameters i.e. pH, Temperature, Turbidity, Dissolved Oxygen and Ammoniacal Nitrogen. The water samples were then analyzed using Atomic Absorption Spectrometer (AAS) and Inductively Coupled Plasma Optical Emission Spectrophotometer (ICP). Water Quality Index was also calculated based on six parameters determine in the water sample. The results show that Meru Township, Klang can be considered polluted because it has the higher concentrations of BOD and COD. The results than referred and compared to the Environment Quality Act 1974 (Sewage and Industrial Effluent) Regulations 1979. Out of five metals that had been investigated, Pb, Hg and Cd concentrations are over the Limit Effluent Discharge Standard. Ni and As concentrations are below the Limit Effluent Discharge Standard. The highest concentration of metal in the water effluent is Pb 8.932 ppm followed by Cd 1.182 ppm, Ni 0.101ppm, Hg 81 ppb, and lastly As 26 ppb.